

c/o ST-ECF  
ESO, Karl-Schwarzschild-Str.2  
D-85748 Garching bei München,  
Germany  
Telephone: +49 (0)89 3200 6306  
Cellular : +49 (0)173 38 72 621  
Telefax: +49 (0)89 3200 6480  
hubble@eso.org

[www.spacetelescope.org](http://www.spacetelescope.org)

**Heic0406 Video News Release, v.4  
Hubble's deepest view ever of the Universe**

**EMBARGOED UNTIL: 15:30 (CET)/9:30 AM EST 04  
March, 2004**

**[Narrator]**

Why would anyone aim the world's most sophisticated telescope at the same piece of sky for 28 days in a row?

Answer: because it allows astronomers to see much farther out and further back in time that ever before!

American and European scientists today unveiled the deepest portrait of the visible universe ever achieved by humankind – The Hubble Ultra Deep Field.

Located in the constellation of Fornax, just below the constellation of Orion the hunter, the image spans just one-tenth the diameter of the full Moon, but reveals an estimated 10,000 galaxies.

The Ultra Deep Field shows galaxies that are 2-4 times fainter Hubble could see previously, so Hubble takes us to within a stone's throw of the big bang itself!

**[Piero Rosati, European Southern Observatory explains about Deep Fields in general]**

*"The first Hubble Deep Field was in 1995. When this experiment was first proposed – an experiment consisting of staring at the same patch of sky for weeks – nobody really knew if this would lead to any interesting scientific results. But when we first looked at the imaged we were astonished! We could see more than 3000 galaxies in this small field. We could definitely tell that the Hubble Deep Field opened a whole new era of observational cosmology. Just forming our view of the distant universe".*



*Hubble in orbit: 15 sec*



*Zooming on the sky: 45 sec*

**I/V Piero Rosati Hubble Ultra Deep Field in the background**



*Pan on 1995 Hubble Deep Field North*

<p><b>[Narrator]</b> After the first Deep Field almost all ground- and space-based telescope were then pointed to this same area for long periods. Some of the most interesting results in astronomy emerge from these fruitful synergies between instruments of different sizes, in different environments and with sensitivity to different wavelengths.</p> <p><b>[Piero Rosati, European Southern Observatory explains about Deep Fields]</b> <i>"These impressive dips into the depths of space and time have provided astronomers with the first glimpses of the history of young galaxies when the Universe was only 1 billion years old. This has been one of the greatest and strongest legacies of the Hubble Space Telescope."</i></p> <p><b>[Narrator]</b> The new Hubble Ultra Deep Field image is studded with a wide range of galaxies of various sizes, shapes, and colours.</p> <p>These faint galaxies give 'fossil' clues as to how the Universe looked in the remote past and how it may have evolved with time.</p> <p>The astronomers expect many fascinating scientific results to emerge from this image – for instance the discovery of distant supernovae that will help understanding the past and future of the Universe. Undoubtedly the image will also hold a number of surprises that will lead to unexpected discoveries.</p> <p><b>[Søren Larsen, ESA/ESO I/V]</b> <i>"One of the great things about Hubble is that there are many instruments onboard that can make different observations at the same time. So what we are analysing here are data taken with an instrument that basically splits the light into a rainbow of colours. This is done with a grism like this one here. It allows us to study the properties of galaxies in a lot of detail and we can learn how these things work and what powers them."</i></p>	<p><b>Different surveys in the Hubble Deep Field North area – Hubble, Chandra, ISO</b></p>
	<p><b>I/V Piero Rosati Hubble Ultra Deep Field in the background</b></p>
	 <p><i>Pans/zoom on the Hubble Ultra Deep Field</i></p> <p><i>Pop-up zooms on the Hubble Ultra Deep Field</i></p>
	<p><b>Søren Larsen I/V in front of screen in his office</b></p>
	<p><b>Søren Larsen shows the grism</b></p>
	<p><b>Close-up on grism</b></p>
	<p><b>Close-up on screen</b></p>

**[Narrator]**

This historic new view is actually two separate images taken by two instruments: Hubble's ACS camera and the NICMOS instrument. The combination of ACS and NICMOS images will be used to search for galaxies that existed between 800 and 400 million years after Big Bang.

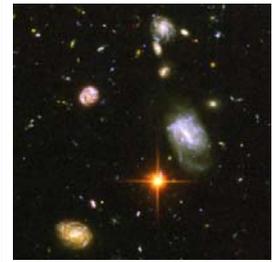
NICMOS sees even farther than the ACS. It reveals the farthest galaxies ever seen because the expanding universe has stretched their light into the near-infrared portion of the spectrum.

**[Piero Rosati in front of whiteboard, explains about the cosmological implications of looking this far out]**

*"When Hubble looks at the distant Universe it looks back in time. We can sketch this: This is Hubble and here we are 14 billion years after Big Bang. The first Hubble Deep Field could see out to here – 12 billion years of cosmic history. The New Ultra Deep Field push this exploration beyond – further back in time. For the first time we are able to see the stars and galaxies which were formed right at the end of the so-called Dark Ages."*

**[Narrator]**

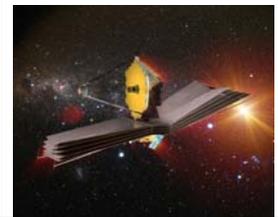
The NASA/ESA Hubble Ultra Deep Field is likely to remain the deepest image of the Universe for the next decade or so, until an ESA Ariane rocket launches the James Webb Space Telescope in 2011.



ACS/NICMOS blends [w. text]

Piero Rosati drawing

Animation showing Universe timeline



## Shotlist

<b>TIMECODE</b>	<b>DESCRIPTION</b>
	<b>A-ROLL</b>
10:00:40	Hubble in space
10:00:59	Hubble zooms on the Ultra Deep Field
10:01:38	Interview with Piero Rosati, European Southern Observatory (ESO)
10:01:53	The first Hubble Deep Field from 1995
10:01:59	Interview with Piero Rosati, European Southern Observatory
10:02:10	Different 'Hubble Deep Field' surveys with Hubble, Chandra and ISO.
10:02:28	Interview with Piero Rosati, European Southern Observatory
10:02:46	Pans and zooms on the new Hubble Ultra Deep Field
10:03:33	Søren Larsen I/V, ESA/ESO, in front of screen in his office
10:03:50	Close-up grism
10:03:56	Clos-up screen
10:04:01	Blending between the ACS and NICMOS parts of the Hubble Ultra Deep Field.
10:04:31	Cosmic timeline
10:05:12	Scientists looking the Ultra Deep Field
10:05:19	The NASA/ESA/CSA James Webb Space Telescope
10:05:28	<b>END A-ROLL</b>
	<b>B-ROLL</b>
10:05:34	A-roll animations and footage unedited
10:16:29	Hubble Space Telescope stock animations
10:20:02	<b>END B-ROLL</b>